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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Idaho State Office, Ecological Services
4696 Overland Road, Room 576
Boise, Idaho 83705

March 14, 1994

C. Gregory Johnson
District Ranger
Yankee Fork Ranger District
Challis National Forest
HC 67 Box 650
Clayton, Idaho 83227

Mark Johnson
Area Manager
Challis Resource Area
Salmon District
Bureau of Land Management
Hwy 93 South P.O. Box 430
Salmon, Idaho 83467-0430

Subject: Cyprus Thompson Creek Mining Company--Plan Modification for Remediation of Acid Mine Runoff--Scoping
File # 1050.5102

Dear Messrs Johnson:

The U.S. Fish and Wildlife Service (Service) has reviewed the scoping document for the proposed modification of Cyprus Thompson Creek Mining Company's Plan of Operations (Plan). The company has proposed amendments to their plan intended to address acid rock drainage from waste material tailings and pit walls. The Service is concerned about the potential effects of acid mine runoff on aquatic and terrestrial fish and wildlife resources. Your decision-making process for the plan revision should include full consideration of past, present, and future impacts on fish and wildlife and their habitats.

The Service offers the following comments and concerns for consideration in the Forest Service's and Bureau of Land Management's National Environmental Policy Act (NEPA) analysis for the Plan amendments.

GENERAL COMMENTS

The Service is concerned about potential abandonment of the Cyprus Thompson Creek Mine. The site has not been in active operation for more than a year, and we are concerned that the cost of remediating acid mine drainage problems may make operation cost-prohibitive. We would like information about how the Forest Service, Bureau of Land Management, and State agencies propose to deal with existing acid-generation problems if the mine is not reopened. The Service suggests that you provide information about contingencies for correcting problems at the mine site if the company is no longer able to do the remediation work. A significant issue is whether the existing bond will be sufficient for the agencies to correct problems at the site. Your approval of a final, amended plan should include a requirement for bonding which is sufficient to allow State and Federal agencies to complete cleanup and reclamation of the site if the company does not.

The scoping document outlines a number of methods for isolating acid-generating material, including capping waste rock dumps, placing an inert cover on the tailing impoundment, and treating water before it leaves the site. Your Environmental Assessment (or Environmental Impact Statement) for the plan revision should include documentation of the feasibility and effectiveness of proposed measures, including citations of their effective application in other areas. The Service believes that this information is critical for evaluating the potential for proposed measures to effectively eliminate adverse effects from acid mine runoff.

The Service believes that the final approved plan should encompass all components of the mine operation for interim closures, active mining, and final reclamation. According to the scoping document, not enough information about the pit has been developed to determine potential for acid generation or runoff, so no proposal can be developed for remediation at this time. We recommend that you wait until the situation with the mine pit and all other components of the project are well understood before approving a final amended plan of operations. We do understand that some interim remedial measures may need to be implemented immediately, and we encourage you to approve them as appropriate.

SPECIFIC COMMENTS

Page 2 The approved tailing facility includes seepage of water through the tailing impoundment dam, into an area behind the seepage return dam (SRD), and then into a sump system. It is not clear where the water goes from the sump system, whether it is recycled for processing or returned to Bruno Creek, with the sump system functioning to control the rate of return. While we are aware that this system is most likely described in detail in the approved operating plan, we suggest that you provide a complete explanation of this component of project water management in the NEPA document for the amendment. This information will be important for evaluating the potential for acid generation in the tailing impoundment to adversely affect fish and wildlife resources.

Page 3 The scoping document describes three categories of waste rock generated at the mine site and classifies them with respect to their acid-generating potential. We suggest that you provide information about the proportions and locations of each type of material in the two existing waste dumps and future waste material. This information is important for understanding the relative potential for acid mine runoff and possible effects on fish and wildlife resources.

Page 4 The Service requests that you develop detailed information about the capacity of the tailing impoundment to hold operational waste material, stormwater, and runoff. The tailing impoundment should have sufficient capability to hold water and tailing materials so that there is no risk of damage to aquatic organisms or habitat from overtopping. In addition, the Service requests that you evaluate and explain risks to wildlife, particularly birds and small mammals including bats, from direct contact with material in the tailing impoundment.

This paragraph also refers to acid generation in water that seeps through the impoundment dam. You should provide information about quantity of water

seeping from the impoundment, whether this water pools behind the SRD, and whether there is subsequent leakage through the SRD itself. The Service is very concerned about the potential for wildlife to have primary contact with water contained behind the SRD, the risk of soil contamination, and the risk of impacts to aquatic habitat from surface or underground flow into Bruno Creek.

The paragraph describing the acid generating potential of the pit is very unclear. It states that the supplemental plan does not contain any information on this subject, but that previous studies indicate that potential exists. Given that some of the waste rock has high acid generating potential, it is likely that the same is true for the pit. Information concerning acid generation within the pit should be included as part of the baseline for your NEPA analysis for the amended plan. You should also provide some information about the final configuration of the pit; for instance, does the pit "daylight", will water in the pit post-closure come from intercepted ground water or from surface water, and will there be water outflow from the pit once it has filled with water. All this is important baseline information for evaluating the potential impacts to fish, wildlife, and downstream aquatic resources associated acid runoff from the pit.

Page 5 The discussion of treatment of potentially acid producing waste rock does not include information about how the company proposes to verify whether isolation of Types II and III waste rock has been achieved. The Service is concerned that remediation of problems will be extremely difficult once waste rock is in place on the dump. The system for developing low permeability seals above acid producing rock is said to limit permeability. Your NEPA document should clearly establish that limiting permeability is sufficient for protecting terrestrial and aquatic resources. The Service suggests that infiltration through acid producing rock should be eliminated.

According to the scoping document, water flowing through and under the dumps will flow into settling ponds below them. The company proposes monitoring them in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements. The Service suggests that you provide information about the monitoring program in your NEPA document, including timing, parameters sampled, and provisions for monitoring post-closure and in event of mine abandonment. We are also concerned about direct and downstream risks to wildlife if those settling ponds do contain contaminated water. Further, you should consider the capacity of those ponds to withstand major storm or runoff events.

The Service recommends that you consider the feasibility and implications of backfilling the pit with Types II and III waste rock as a method of isolating material with acid generating potential. We believe this may be the best way to assure reduction of the risk of acid runoff from the dumps and could avoid some adverse effects on wildlife, fish, and aquatic habitat from acid runoff.

Page 6 The Service is very concerned about the statement that Thompson Creek Mining Company will continue to monitor and treat water leaving the mine site, if the operation is terminated in its current configuration. First, it is not clear what assurances there are that (or how) the company will continue to contend with this problem if the mine is not generating income. Second, the inference of this paragraph is that the company will treat the water leaving

the mine site, but not necessarily deal with the source of the acid runoff. We believe this is not a sufficient solution to the problem in either the short- or long-term because of risks of failure of water treatment systems, the high level of maintenance and monitoring required, and the fact that there will be multiple locations above the treatment system at the mine site where contamination exists. Altogether, this represents a significant risk to fish and wildlife. We suggest you evaluate and disclose the capability of the company to solve runoff problems at their sources in the event that mining does not resume.

We recommend that you provide detailed information about treatment of the tailing facility under three scenarios: during operation, if operations are terminated or not reinitiated, and in the long-term after site abandonment. We are concerned about sources and quantities of materials necessary for capping or covering the impoundment and areas behind it. You should relate this proposal to anticipated rainfall and runoff at the site. For instance, the proposal relies on maintaining saturation of the material in the tailing impoundment, but it is not clear whether this relies on precipitation as a source of water and how much would be required.

As with the dumps, the Service has reservations about the feasibility of monitoring and remediation for seepage from the tailing impoundment in the event that Thompson Creek Mining does not resume mining operations.

Pages 6 and 7 Part (3A) outlines the proposal for removal of pyrite from the tailings. In the NEPA document, you should provide information about volumes of inert tailings and pyrite concentrates and show that the proportions will be sufficient for the proposed system to be effective. It is important that you have assurance that the proposed method will be effective over the long-term at preventing adverse effects on fish and wildlife associated with the tailing impoundment.

Part 4 describes a tailing embankment constructed from inert tails. The NEPA document should include information about how you will assure that the material to be used does not have acid producing potential. This section states that in the event of interim closure, low permeability soil will be placed on the embankments, but there is no information about the source of such material. For both cases, you should provide information about how the material will be stabilized and the potential for revegetation of the site.

The Service is concerned about the long-term stability of the tailings dam. If the tailings will have long term potential for acid production, a failure of the dam could cause movement and exposure of the material and result in wide-spread acid production. We believe the risk of failure may be greater if the tailings remain saturated. The effects on fish and wildlife could be significant and remediation of the problem very difficult. We recommend that you provide information in the NEPA document which deals with this issue.

As we stated above, your NEPA document should include a description of the configuration of the pit and outflow locations and volumes. This information is critical whether mining is completed as planned, or if the operation does not resume, and both situations should be fully evaluated. The Service is concerned about danger to wildlife from the open pit itself and from a standing source of potentially contaminated water, as well as with the effects

of outflow of acid drainage.

There is reference on this page and elsewhere to NPDES permit(s). It is unclear whether these are permits already issued or permits the company intends to apply for as part of their plan modification. If the modified plan will rely on existing permits, we recommend that you include the terms and conditions of the permit in your NEPA document. If new permits will be required, we suggest that the Environmental Protection Agency be involved in preparation of the NEPA document as implementation of the proposed modifications will depend on their approval.

Page 8 The section concerning interim closure periods needs to be developed in greater detail before you make a final decision on the proposed plan modification. The Service suggests that you provide whatever information you can about how often and for what durations the facility may be closed (for instance, whether operations cease during winter), and what monitoring and maintenance will be done during temporary closures.

More information should be provided about proposed reclamation. We suggest that you provide information about the likelihood of successful revegetation of sites such as the waste dumps and the downstream embankment face of the tailing impoundment. These facilities will be capped with material which is intended to be relatively impermeable, and that feature could influence the success of revegetation efforts. Also, we recommend that you describe the anticipated effects of leaving spillways and settling ponds in place--whether you expect riparian vegetation to develop around them, whether they will attract wildlife, and the effects of potentially degraded water quality in the long run.

The Service recommends that you evaluate information about the practicability of developing a wetland on the tailing impoundment. There should be assurance that there will be sufficient water to support wetland plants (and to keep the tails saturated to prevent oxidation) and that the tailings material can actually support hydric vegetation. Your NEPA document should provide complete information about the risk of uptake of metals and contaminants from the tailings into plant tissue, and the potential for wildlife to be adversely affected by consumption of the plants. The Service suggests that you weigh the relative benefits of establishing a plant community on the reclaimed tailing pond against the risks of attracting wildlife to a potentially contaminated site. Full information about this issue should be included in the NEPA document.

Page 10 If capping the waste dumps effectively precludes percolation of water through the dump, that would reduce but not eliminate water coming in contact with waste rock because of surface flows which sub under the dumps and discharge at the lower end. We recommend that you provide information about the anticipated volume of flow under the dumps following mine closure, and evaluate the potential for acid generation related to that source.

We suggest that you provide information which gives reasonable assurance that capping waste dumps is an effective long-term way to assure that acid-generating waste material does not come in contact with water. The Service is concerned about the long-term stability of the dumps. As with the tailing impoundment, a failure of one of the dumps would expose previously-isolated

materials with a likelihood of producing acid runoff. In addition, we are concerned that the capping material should be durable over the long term.

The Service has two questions regarding the Pyrite Reduction Facility and Borrow Areas. First, it is unclear whether there are any human or wildlife safety considerations associated with the temporary storage of pyrite. The NEPA document should provide information about this. Second, the company proposes a contingency measure using material from Saturday Mountain for regrading and covering the tailing impoundment if sufficient material is not available from the milling process itself. The Service discourages you from authorizing new ground-disturbance, and we encourage you to explore other, on-site sources of material.

Page 11 While we understand that some of the mine facilities are located on private land, the effects of the company's remedial actions on their patented property are interrelated and interdependent to actions and effects on public land. Therefore, it is the Service's position that all actions at the mine site should be viewed together and that the public and resource agencies should have the opportunity to review a comprehensive plan for the entire mine site. We encourage you to work with the appropriate State agencies to develop a revised plan of operations for the Cyprus Thompson Creek Mine.

Page 12 If you decide that the plan revision constitutes a major Federal action requiring development of an Environmental Impact Statement, we encourage you to consider interim measures aimed at reducing the likelihood of adverse impacts to fish and wildlife resources during the time period required for completing the NEPA process.

We encourage you consider requesting that the Environmental Protection Agency be a cooperator in the NEPA analysis for the plan revision because of the critical role they play through the NPDES permitting process.

You should determine early in the NEPA process whether there may be activities in the revised plan which are regulated under Section 404 of the Clean Water Act, and involve the U.S. Army Corps of Engineers in planning and analysis.

Page 13 It is unclear from the paragraph on this page what role the Idaho Department of Lands will have in approval of the revised plans. We strongly recommend that you work with the State to assure that the remedial actions for the entire site are consistent and that all potential effects are considered together.

The scoping document makes note of your consulting obligations under Section 7 of the Endangered Species Act, and we encourage you to initiate informal consultation early in the analysis process. We further suggest that you fully consider potential effects of the plan revision on bull trout, a candidate for listing under the Act. The species is suspected to occur in both Thompson and Squaw Creeks according to information from the Idaho Department of Fish and Game. You should determine the distribution and density of bull trout at the site and in the downstream area of impact, and determine potential impacts and appropriate mitigation to eliminate adverse effects from the mine operation.

Page 16 The Service encourages you to consider a wide range of alternative means for dealing with potential acid mine drainage from the mine site. We

recommend that you consider the implications of backfilling the pit as a way to isolate acid generating material and to ameliorate problems with runoff from the pit. Also, you should fully analyze strategies requiring use of water treatment plants; the Service prefers a strategy which employs a long-term solution at the source, rather than one treating the effects of acid production which will require long-term, active operation and maintenance.

The Service appreciates having the opportunity to review the scoping document for the revision of this mine plan of operations and to provide you with comments on the proposed plan. We look forward to continued participation in the NEPA analysis for the project. Our comments are made under the authority of the Endangered Species Act, the Fish and Wildlife Coordination Act, the National Environmental Policy Act, and the Migratory Bird Treaty Act. Please contact Alison Beck Haas of my staff if you have questions or comments.

Sincerely,

Susan B. Martin
for Charles H. Lobdell
State Supervisor, Ecological Services

cc: FWS-ES, Portland
EPA, Boise
EPA, Seattle
IDFG, Salmon
IDFG, Boise
CE, Boise (Flowers)
CE, Walla Walla
IDOL, Boise
IDHW-DEQ, Boise
IDWR, Boise